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Challenging dominant discourses of climate change

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Challenging dominant discourses of climate change

ABSTRACT

The influence of language on communication about climate change is well recognised, but this understanding is under-utilised by those seeking to increase uptake of action for climate change. We discuss the terms, discourse, resistance, and agency, to assist in developing ways to progress social action for climate change. Using a review of academic literature about climate change, we explore three of the many dominant discourses that constrain action: the logical action discourse; the complexity discourse; and the culture of consumption discourse. While there are more discourses about climate change, especially in the popular literature, the ways these three operate in the peri-scientific sphere is under-recognised. We suggest that by examining the different framings of climate change, there is potential to create novel discourses and to start new processes of societal response. This paper challenges the dominant scientific framing of climate change and seeks to begin the process of creating change through changing discourses.

KEYWORDS: climate discourses; discourse analysis; subject positioning; science communication; public understanding of science

Challenging dominant discourses of climate change

1 INTRODUCTION

Climate change research continues to produce an information explosion. The diversity and volume of information means that different understandings of climate change abound as individuals struggle to make sense of it all. Sarewitz (2004, p.389) warns that: “those holding different value perspectives may see in the huge and diverse body of scientific information relevant to climate change different facts, theories, and hypothesis [sic] relevant to and consistent with their own normative frameworks”. It is therefore appropriate to think about how ideas and discourses about climate change gain currency, and how these discourses help or hinder action in response to climate change.

Various discourses of climate change are created within different social groups using different types of language and privileging different concepts. For example, climate change is constructed differently by science (Sarewitz 2004); the media (Boykoff 2008; Carvalho 2007; Ahchong and Dodds 2012); politics (Bäckstrand and Lövbrand 2007; Oels 2005); environmental education (Clover and Hill 2003); and different groups within society (Ratter et al. 2012). Each social group or discipline advocates one way of constructing climate change over others. Each also generally refuses to acknowledge the existence of others. There is potential to create change through enhanced awareness of the multiple framings and by challenging the dominant discourses (Hardy et al. 2000; Gatenby and Hume 2004; Lejano et al. 2013).

Post-structural theory is concerned with language, the effects of language, and alternative possibilities for thought (Foucault 1972; Kress 1985). The way language is used in relation to climate change has important consequences, which are currently not sufficiently recognised (Pettenger 2007). As an alternative to positivist or psychological approaches, post-structural theory advocates examination of discourse to understand behaviour, rather than examining attitudes, perceptions, and opinions. Post-structural theory contends that individuals are constituted within discourse(s) and that discourses are an opportunity for change (Hajer 1995).

Accounts of discourses of climate change have been provided in many papers, including and amongst others (in chronological order): Kempton (1991, 1997); Weingart et al. (2000); Adger et al. (2001); Feindt and Oels (2005); Hajer and Versteeg (2005); Lindseth (2005); Etkin and Ho (2007); Lorenzoni et al. (2007); Hulme (2009); Risbey (2008); Doulton and Brown (2009); Malone (2009); Fleming and Vanclay (2010); Boykoff et al. (2010), Nerlich et al. (2010); Arora-Jonsson (2011); Hoffman (2011); and Hobson and Niemeyer (2011). In general, however, while discourses are identified, the ideas are not developed further. For example, Hulme (2009) discusses four ways of narrating the significance of climate change. Although described as ‘discourses’ in the preface to the book, Hulme did not focus on how subject positions and opportunities for social change were constructed or constrained.

Our paper adds to these accounts by applying post-structural theories of agency and change (Foucault 1972; Kress 1985). Our approach was to undertake a discourse analysis based on a critical reading of academic papers on climate change, and to

discuss how the discourses we identified and their corresponding subject positions might influence perspectives on climate change communication. We argue that an awareness of the multiple possibilities of discourse can begin the process of creating new discourses. Effective promotion of change at individual, community and government levels is essential to limit the negative effects of climate change and to enable vulnerable communities to adapt. By discussing three examples of discourses of climate change, this paper demonstrates the importance of language in framing the actions able to be considered. We emphasise that there are many discourses of climate change, not all of which can be discussed here.

2 DISCOURSE, RESISTANCE AND AGENCY

The terms ‘discourse’, ‘resistance’ and ‘agency’ are central to post-structural interpretations. They have varying meanings in different contexts and disciplines such as communication studies, education, environmental studies, and sociology. Also, academic understandings do not necessarily align with public understandings of these terms. Although all have been used in relation to climate change, their meanings are unstable because they are contested by other discourses that also use the terms (Gee 2003).

Discourse refers not to language as simple conversation, but rather to everything that language use entails, including the active construction of thoughts, identities, and actions (Foucault 1972, 1980; Gee 2003; Kress 1985). Discourse “provides a set of

possible statements about a given area, and organises and gives structure to the manner in which a particular topic, object, process is to be talked about. ... it provides descriptions, rules, permissions and prohibitions of social and individual action” (Kress 1985, p.7).

Although the term ‘resistance’ is usually applied to inaction or refusal to act, and is perceived as a problem to overcome, in post-structural theory resistance becomes a potential site for change, “the means through which individuals change social processes and structures and build alternatives” (Sage 2007, p.4707). Thus, resistance can be a positive process as part of the social processes that create change. Reasons for resistance occur at the level of individual, infrastructure and societal norms, but resistance also occurs at the level of discourse. Arguably there is little value in examining individual, infrastructural or normative causes of resistance without exploring discourse, because discourse influences all of these.

Agency is how an individual is able to act, and includes awareness of options and personal capacity to implement those options. In essence, agency equates to action, but it is social discourses that create possibilities for individual action, because context shapes opportunities for action. Individuals contribute to social discourses and therefore influence their own futures. However, individual agency is not possible without access to resisting discourses that demonstrate how resistance at the level of discourse is positive and leads to agency and change (Darier 1999; Hardy et al. 2000; Gatenby and Hume 2004).

3 CLIMATE DISCOURSES

By applying the concepts of discourse, resistance and agency to climate change and by taking three examples, we illustrate how dominant discourses are currently constraining possibilities for thinking about action among different groups within society. As part of a study into communication of climate change to farmers (Fleming and Vanclay 2009, 2010), literature was gathered over several years on anything that could be considered relevant to climate change communication and agriculture across a range of disciplines, including climate science, science communication, environmental sociology, environmental education and media studies. Over the whole research process – i.e. gathering literature, data collection (interviews with farmers and climate scientists), data analysis, attending conferences, and writing papers, ideas about how the discourses influenced action were developed.

During the development of these ideas and in the process of identifying discourses, it became apparent that some discourses were readily recognisable and recognised, while others were less clear and not widely acknowledged. Discourses around social marketing, environmental education, the green movement and vegetarianism, for example, were already receiving considerable academic attention. Nevertheless, action on climate change was still constrained. Therefore, from the many discourses of climate change we identified, we selected three indicative discourses which we thought provided good examples of how discourses can *subconsciously* constrain wider action in a way that warranted closer critical attention.

The three discourses we selected related to concerns about: (1) a problem of a lack of information; (2) a problem of a lack of clear science; and (3) a problem created by a consumerist society. For convenience, we called them the ‘logical action discourse’, the ‘complexity discourse’, and the ‘culture of consumption discourse’. These three discourses were chosen because they appeared to us to be particularly powerful in constraining active social action for climate change because they emphasized: (1) the need for more science, so society cannot act until more is known; (2) confusion, so individuals cannot be sure they are doing the right thing; and (3) the need for extreme change to society, which is difficult for individuals to implement alone. Each of these three discourses has different consequences for how people are able to think and act. They are not necessarily mutually exclusive, and although there are similarities, there is a unique storyline in each.

We stress that we are not criticizing the publications that co-construct the discourses or the underlying understandings, rather we seek to reveal how the presentation of arguments within these discourses may hinder rather than advance action in responding to climate change. We also note that publications on climate change extend beyond academic papers to popular works and the general media. Discourse analyses of such material has been completed by many others (e.g. Hulme 2009) and so our approach is to focus on the rarely-critiqued academic literature. The aim of our paper is to encourage people to challenge these and other discourses in order to create new possibilities for thought and action.

An important concept in discourse analysis, ‘subject positioning’, refers to how each discourse emplaces and empowers, or disempowers, individuals within the discourse (Jorgensen and Phillips 2002). In our discussion of each discourse, we highlight the respective subject positions in order to highlight opportunities for contestation and change.

4 THE LOGICAL ACTION DISCOURSE

A dominant construction of climate change presents the need for more information, or at least the need for a better understanding of available information, as the most significant barrier to what it presumes would be logical action in response to climate change. Climate change presents an urgent reason for change in the eyes of many influential authors (e.g. Stern 2007). The long-established diffusion of innovations model (Rogers 1962) presents a way to understand social response to the need for behaviour change in a way that is attractive to policymakers (Pannell et al. 2006). The diffusion of innovations model has similarities to the information deficit model (Potter and Oster 2008) because both assume a direct link between information and behaviour change. Sociology has refuted this assumption for decades (Wynne 1991, 1992; Vanclay and Lawrence 1994; Irwin and Wynne 1996; Vanclay 2004), yet in the climate change arena the assumption that the lack of information is the most important obstacle in the way of otherwise logical action remains a dominant discourse (Potter and Oster 2008; Moser and Dilling 2007).

Related to the discourse of logical action are two key issues of persuasion and personal capacity, which underpin a core assumption of the logical action discourse that responsive action is (or should be) the logical outcome of the provision of appropriate information. Persuasion refers to the notion that scientific information is the only correct source of information and a critical component in catalysing change. The belief is that scientists have an obligation to influence the public through the provision of information. Because of differences between people, the information may need to be targeted differently in order to effectively influence various groups of people to bring about change. This is illustrated in the following extract: “Information is necessary, but not likely to be sufficient, to bring about change. What is critical, however, is the way that information is conveyed to different stakeholder groups” (Milne et al. 2008, p.91). Persuasion also emphasises the need for credible messengers (Cole and Watrous 2007) or opinion leaders (Nisbet and Kotcher 2009; Keys et al. 2010), and for appealing and manageable pieces of information (McKenzie-Mohr and Smith 1999).

Personal capacity, the second key issue in the logical action discourse, regards the personal context of individuals as being critical in influencing change. Personal capacity includes various contextual factors such as: (1) the availability of the physical resources required to change, e.g. time, money, infrastructure, and technology; (2) the characteristics of the change process, e.g. risk, convenience, ease, flexibility, and divisibility; and (3) personal orientation to change, e.g. motivation, risk acceptance, access to support networks, and other individual character traits and skills (Moser and Dilling 2007). Personal capacity (or rather the lack of capacity) regards behaviour change as being difficult, constrained by ‘barriers to change’, and as requiring a range

of steps to address. The primary important step is the provision of information. Thus, the ability to source information and the skills to apply it to one's own context are major issues of personal capacity. Both persuasion and personal capacity rely on the assumption central to the logical action discourse that change is a logical and natural response to reflection on the scientifically-endorsed information. This means that it is expected that, once the appropriate information about the issue and required change has been persuasively conveyed, action should directly follow if there is sufficient personal capacity to act.

4.1 Subject positions in the logical action discourse: laggards lacking resources

The diffusion of innovations model (Rogers 1962) labels individuals who are slow to change as 'laggards', often associating them with a lack of capacity (Vanclay 2004; Vanclay et al. 2009). This is illustrated in the logical action discourse where resistance to change is seen as being the result of an individual having insufficient information, a lack of understanding of available information, or an incapacity to act. In the logical action discourse, individuals are positioned as passive recipients of information who should respond to expert information with immediate change, regardless of their personal context. Society is understood to be heterogeneous, and it is accepted that there is no single type of information that will encourage all people to change. Instead, it is necessary to tailor and target information to different groups and, ideally, information for each group should be communicated from an accepted and familiar source. It should also be clearly relevant and easily applied (Stoll-Kleemann et al. 2001; Moser and Dilling 2007). Therefore, skilled communicators are required to translate the

information, and thus a failure by the public to respond positively is seen as a failure of the information or its communication. In the logical action discourse, externally-produced and communicated information is essential, because individuals are not recognised as being capable of producing their own reasons or methods for change. Therefore, if individuals understand and accept information but do not respond, it is because they lack the necessary resources or personal capacity to change. The discourse of logical action privileges behaviour change at the level of the individual rather than society.

Behaviour models (e.g. Rogers 1962) usually ignore the connections between an individual's capacity to act and power, particularly in terms of the differential power of institutions, social networks, cultures and languages. Information is an important element of behaviour change, but it can also be argued that the socio-cultural factors of discourse are more important in shaping, constraining and creating behaviour (Sturgis and Allum 2004; Potter and Oster 2008).

The considerations that shape behaviour are complex and inter-related, and are based on language and social processes, which are not properly acknowledged by the logical action discourse. Examining the individual characteristics of people, behaviours, or the quality of information without connection to wider social, political, cultural and historical constructions of discourse is not an adequate way to understand behaviour or to create change (Vanclay 2004; Feindt and Oels 2005). We contend that the logical action discourse limits possibilities for thinking about climate change and for taking up action because of its over-emphasis on individual deficits.

5 THE COMPLEXITY DISCOURSE

In the complexity discourse, climate change is promoted as complex because climate research, the dissemination and comprehension of information, and behaviour change, all represent wicked problems. Problems termed ‘wicked’ are those which are especially interrelated and complex. This complexity means that actions intended to address climate change can appear difficult, overwhelming or pointless (Hulme 2009, Moser and Dilling 2007). An example of this discourse is the following extract: “climate change is a very complex, pervasive and uncertain phenomenon, generally difficult for people to conceptualise and to relate to their daily activities, arguably because it cannot be easily translated into the language of popular culture” (Lorenzoni and Pidgeon 2006, p.74).

The complexity discourse presents climate change as a highly-specialised science, as a totality in itself, but also as being compartmentalised into various subgroups, e.g. associated with oceans, land masses, or the atmosphere. This discourse emphasises that there are diverse and interrelated effects of climate on the environment and on people, with multiple layers of possible interactive responses in both mitigation and adaptation to climate change. Furthermore, these effects occur over long timescales (decades and centuries), thus cause-and-effect connections are difficult to establish and not likely to be experienced in an individual’s lifetime (Moser and Dilling 2007).

In the complexity discourse, there is a tendency to detail the multiple areas of complexity involved with climate change, to indicate that climate change is complex but to create an awareness (belief) that it can be managed if issues are simplified and resolved separately (Moser and Dilling 2007). This converts a seemingly-impossible, gargantuan task into an easier task of dealing with a multitude of smaller but manageable problems.

Two key issues in the discourse of complexity are uncertainty and misunderstanding. A focus on the uncertainty of climate change and the complexity of interpreting climate data is common (Mearns 2010). In most cases, the uncertainty is integral to the science and relates to notions of statistical probability and confidence intervals rather than to any diminution of scientific validity. Nevertheless, perceived uncertainty emphasises complexity, which is promoted by the media to create controversy and debate and thus generate a market for news (Carvalho 2007).

Emphasis on uncertainty and the need for more science to create more knowledge commonly occurs in the complexity discourse, as demonstrated by: “Troubles in translating this consensus in climate science have led to the appearance of amplified uncertainty and debate, also then permeating public and policy discourse” (Boykoff 2008, p.1).

The complexity discourse emphasises uncertainty as a normal part of the production of science, but it is an uncertainty not properly understood by non-scientific audiences (Hulme 2009). With uncertainty comes confusion and misunderstanding (Bord et al.

2000; Kempton et al. 1995). Well-publicised misunderstandings around climate science include: the difference between ‘the hole in the ozone layer’ and climate change; weather and climate; climate change and environmental pollution/acid rain; and adaptation and mitigation. The complexity discourse uses these misunderstandings as evidence that the public is confused and requires more education. The discord between public and scientific understandings of uncertainty, probability, confidence and risk is regarded as a problem to be resolved, rarely taking into account the possibility that the differing values and belief systems that produce these understandings are irreconcilable.

The complexity discourse also emphasises complexity in communication:

“Communication about climate change is as complex as the science” (Chess and Johnson 2007, p.223). The range and inconsistent use of terms adds to the confusion. In order to overcome complexity, the discourse promotes the view that a better understanding of the key terminology is required. This strategy fails to acknowledge that words tend to change meanings within different discourses, so education of specific terms and concepts to reduce complexity is futile. A better approach would be to promote an awareness of meaning within context and within discourse, and to promote awareness of the concept of discourse in general, and the range of discourses relating to climate change.

5.1 Subject positions in the complexity discourse: ignorant and sceptic

People required to act on climate change are constructed within the complexity discourse as being, at best, sceptic¹ and, at worst, ignorant and insufficiently skilled to comprehend the complexity of climate change information without significant assistance. A society ignorant of the proper facts about climate change is expected to come to simplistic and incorrect conclusions. Individuals are perceived as not being able to relate scientific knowledge to their own situations in ways that might be legitimate, valuable or important, because the information is seen as being too complex for them.

The complexity discourse promotes the complexity of climate change as a problem to be overcome (Potter and Oster 2008). It deems the most appropriate solution as being to increase the funding available for, and the amount of, information and communication about climate change. However, because the essence of the message perpetuates the discourse, perversely this strategy perpetuates uncertainty and misunderstandings (Ungar 2000).

In the complexity discourse, people who resist action to address climate change are labelled as sceptics because they fail to accept the climate science justification for change. Although in 'science' generally, scepticism is a key component of scientific rigour and engagement with data, in the complexity discourse the wider society is not seen as being an authorised participant and not given the authority to participate in the legitimisation (and delegitimation) of information. This means that if people are sceptical, it is the result of either a social failure in that the media has failed to adequately communicate the information from science, or an individual failure where a person has

¹ 'Sceptic' is meant as a neutral term here in its original understanding as a person inclined to question. Although sceptics are generally caricatured negatively by climate science, we point out that the sociology of climate scepticism is quite complex and sophisticated, see Lahsen (2013).

failed to adequately comprehend and/or act on the information they have been provided. The clash between science and the media creates different perceptions of the same information because “forms of filtering and reinterpreting information about climate change are rooted in, and reproduce, profoundly divergent value systems” (Carvalho 2007, p.239). We contend the complexity discourse limits action for climate change by over-emphasizing uncertainty and complexity, by failing to accept that individuals have agency, and it therefore contributes to promulgating misunderstanding and confusion.

6 THE CULTURE OF CONSUMPTION DISCOURSE

The culture of consumption discourse emphasises that climate change is highly linked to current social attitudes about lifestyles, consumption habits and environmental values (Tjernström and Tietenberg 2008; Hulme 2009). In this discourse, climate change is a problem caused by materialism and consumerism, as represented in the excerpt: “We have created a society that is totally geared toward generating wealth and satisfaction” (Röling 2003, p.77). Because of this, climate change can be addressed only by changing culture, as demonstrated by the comment that “ultimately, the greatest potential for a shift towards sustainable lifestyles might be through a change in culture – that is, a shift in assumptions about human nature, our relationship with the world around us, the nature of human society, and our aspirations for the Good Life” (Michaelis 2007, p.258). In the culture of consumption discourse, current cultural norms are seen as being so entrenched that a significant event, such as a major natural disaster, is needed to catalyse action and a re-evaluation of culture at individual and societal levels. Without

such a catalyst, society is seen to be doomed to continue to ignore serious environmental problems and the possibility of catastrophic climate change in the blind pursuit of consumption.

Within this discourse, addressing climate change presents a threat to the ideology of consumerism and will be resisted. This is despite clear links between consumer demand for products and the causes of climate change. “Important environmental threats, including climate change, can be directly linked to production of commodities” (von Moltke cited in Clover 2003, p.8). The culture of consumption discourse provides many examples where over-consumption is seen as central to the climate change problem. For example, consumer attention is drawn to food miles, waste, excessive packaging, and our insatiable appetite for cheap products. People are berated for their travel behaviour, especially their personal vehicle use and air travel.

Two key issues prevalent in this discourse are the power of consumerism, and individualism. Individualism is the ideology of the primacy of the individual, where each person is positioned as being an individual and as having the capacity to make individually-rational choices. The irony is that while individualism ostensibly accepts diversity, it tends to fashion everyone as being similar. By locating decision making at the level of individual consumer, each person tends to make decisions that support the status quo. Individualism thus creates resistance to climate change, because, in this framing, fundamental change, especially cultural change, is hard to attain.

Consumerism creates resistance to addressing climate change because the values of competition, capitalism and consumption are actively promoted and widely accepted around the world. Western culture is seen as being built on a foundation of capitalism, and success is equated with wealth and power relative to others (Clover and Hill 2003; Röling 2003). Issues of waste production, environmental degradation, pollution, resource exhaustion, and the negative effects on human health caused by degraded environments are largely ignored in the pursuit of consumerism, and are absent, or at least marginalized, from social awareness and reflection. This discourse encourages us to perceive humans as beyond, separate to, or outside, nature, but that we should also accept that we are dependent on nature and the world's ecosystems (Bowman 2009).

Because people don't want to accept personal responsibility for climate change and/or do not want to experience guilt – what Norgaard (2011) calls the social organization of denial – the culture of consumption discourse creates resistance to the idea of climate change. The placing of responsibility for climate change on individuals can be seen as ethically contentious, as it assumes that everyone is equally responsible and equally culpable (Agyeman et al. 2007). In effect, this legitimates individuals in their failure to accept personal responsibility because they can blame others who consume even more.

One example of where individuals were made to experience a moral imperative to act was in Al Gore's (2006) book and movie, *An Inconvenient Truth*, which attempted to link evidence of climate change at the broad scale to specific actions that can be implemented by each person. It is argued that such moral imperatives are unlikely to be effective (Markowitz and Shariff 2012) and Gore has been criticised for greenwashing

(Luke 2008). Individualising actions to address climate change is problematic in this discourse because the actions individuals can take can seem trivial (Princen et al. 2002), as demonstrated in the excerpt: “Individuals are reluctant to act alone, and only too aware that their individual actions will make [only] a minimal impact on large and complex problems. Our actions are deeply embedded in the wider environment, and in the habits and culture and social norms of those around us” (Hale 2010, p.262).

Actions are also inhibited by existing social structures and infrastructure (Potter and Oster 2008). There is a lack of options that are convenient or comfortable, and therefore resistance to changing behaviour is easily justified (Harrison et al. 1996). For example, individuals might realise that they should not drive a car to work, but where public transport is not readily available or unappealing, it is easy for people to accept they don't have an alternative. In the culture of consumption discourse, many people struggle to see their personal role as part of a significant collective response to climate change (Bateson 2007). Many factors – e.g. nationality, cultural identity, socio-economic status, age, religion, gender – all influence how people feel they should act and how much they are able to act (Carvajal-Escobar 2008; Lambrou and Piana 2006; MacGregor 2006; Patt et al. 2009), yet in the culture of consumption discourse, every individual is regarded in the same way, as an individual consumer and equal contributor to the climate change problem.

6.1 Subject positions in the culture of consumption discourse: homogeneous consumer

In the culture of consumption discourse, different social groups are not positioned differently to each other. Therefore, the particular concerns and capacities of various groups are largely absent from this discourse. People are simply seen as being ubiquitous consumers. Calls for action are likely to be ineffective because of beliefs that no practical alternative exists, that one's personal contribution is insignificant, and that there are bigger polluters who are more responsible. Part of individuals 'doing their bit' and getting involved with their community, whether at the local or global level, relies on a belief that others will also act, including other industries and other countries (Bulkeley 2000). Understanding the cultural, social and political causes of behaviour is limited, despite awareness that these wider understandings are vital in changing behaviour (Moser and Dilling 2007).

7 CONCLUSION

The three discourses discussed in this paper construct climate change in different ways: as a problem of a lack of information in the logical action discourse; as a problem of a lack of clear science creating complexity in the complexity discourse; and as a problem of consumerism in the culture of consumption discourse. While each discourse tends to promote its own view as the sole authority about climate change (Kress 1985), they are interlinked and overlapping. For example, in both the logical action and complexity discourses, information is the central factor promoting change, and in both an inability to understand information and to act on it is the fault of individuals limited by their own

personal incapacity. In the culture of consumption discourse, actions to promote change tend to be lost in the requirements and tensions of a consumption-driven society.

The varying language usage of different social groups is not recognised by any of the discourses. Furthermore, people other than scientists are generally not accepted as being legitimate producers of knowledge, and their understandings of, and feelings about, climate change are dismissed or ignored, despite growing acceptance that varying localised, socially-constructed understandings of climate change are legitimate (Hulme 2009; Pettenger 2007; Potter and Oster 2008; Wynne 1989). The current cycle of climate change information generation and communication excludes people from relating to climate change in a personal or social way. It acts to exclude them from producing and sharing their own knowledge, and from participating in evaluating knowledge about climate change (Potter and Oster 2008).

Issues are understood differently across different discourses and the same problem can both stimulate action in one discourse and/or inhibit it in another. People construct meanings of climate change in their own terms (Bulkeley 2000) and the meaning of unfamiliar terms is deduced within the discourses in which people are already embedded. Whether the meaning that is constructed results in resistance to action or opportunities to act is related to how individual subjectivity and agency are constructed within each discourse, in other words, the way the discourse positions individuals (i.e. the subject position).

Although each of the three discourses we presented largely constrain possibilities for action, awareness of these limitations can allow new types of thinking by stimulating new ways of talking about climate change that are more inclusive of a broader range of social groups and concerns. We argue that the key contributor to positive change is to recognise the power of language in shaping perceptions and actions, and to proactively and reflexively use language to create new conditions. Once recognised, discourses can be challenged and recreated so that new constructions of knowledge and more forms of action are enabled. The first steps, however, are recognising the effects of language in particular situations and using language that is more inclusive.

As the adage normally attributed to Einstein goes: “we cannot solve problems with the same thinking that created them”. Discourses are powerful because they are easily normalised and rendered invisible. When specific discourses are recognised and challenged, exciting changes can occur – for example, a challenge to current hegemonic discourses could result in new approaches to how we think about and use energy, transport, services, work, food, etc. The first, most important step, however, is to see how current ways of thinking may act to produce barriers which could be overcome with a new approach. Different thinking and different approaches to research on climate change that recognise and challenge the discourses they work within and contribute to have the potential to stimulate action, and to break away from the traps set by older discourses that perpetuate their own power. For the three discourses discussed here, the traps we identified were: the need to continually produce more technical information about climate change; the need to continue to elaborate and promote awareness of climate change as a complex problem; and seeing the problem as being ingrained in

social structures which are essentially impossible to address. Better ways of motivating people to effective action can be found when we reflect on and challenge the discourses we embrace and when we start creating, legitimising and growing alternate discourses which might be currently silenced or ignored.

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